

REMARKS

By the present amendment, pending claims 1, 9 and 19 have been amended to respond to the matters raised by the Examiner under 35 U.S.C. § 112.

With respect to matters raised under 35 U.S.C. § 103, applicant respectfully asserts that the following remarks traverse this rejection.

In the formalities rejection, the Examiner noted that claims 1, 3-12 and 15-20 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended claim 1 to specify that 90% to 97% of the diacetyl contained in the unmaturred beer is reduced to acetoin. Such assertion is supported by applicant's original disclosure, particularly in the examples discussed on pages 8-13 of the original disclosure. Additionally, applicant has amended claims 9 and 19 to remove the wording "on the order of." Applicant respectfully submits that the claims are now in proper form.

In the Office Action of July 21, 2003, the Examiner rejected claims 1, 3-12 and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over Pajunen et al (U.S. Patent No. 4,915,959, hereinafter "Pajunen") in view of Ryu (Eur. L. Appl. Microbiol. Biotechnol., 1982, 15(1) 1-8, hereinafter "Ryu").

The article of Ryu teaches the use of wooden chips for the immobilization of yeast and tubular and multistage reactors for the production of ethyl alcohol. The purpose of the reactor is to enhance the rate of ethyl alcohol production. Ryu further teaches a retention time of about 50 hours (tubular reactor, volume 3 l, optimal flow rate 60 ml per hour) and about 50 to 5 hours (multistage reactor, volume 1 l, flow rate 20 to 200 ml per hour) in its method for enhancing the rate of ethyl alcohol production.

Pajunen teaches the use of a DEAE-cellulose resin as a carrier for the immobilization of yeast during the maturation process. Pajunen does not disclose nor suggest any other carrier material other than DEAE-cellulose resin.

Applicant respectfully reasserts that there is no teaching nor suggestion to combine Ryu and Pajunen which would appear to make the claimed invention

obvious to one of ordinary skill in the art. Pajunen was filed over six years later than the Ryu reference. It is apparent that the knowledge of using yeast immobilized on wooden chips during fermentation was available for researchers at the time of Pajunen's application. However, the Pajunen patent gives no suggestion or teaching of using any other carrier other than DEAE-cellulose resin. In fact, a person of ordinary skill in the art, upon reading the Pajunen reference, would be discouraged from using any other carrier other than DEAE-cellulose resin in the disclosed column type bioreactor for the maturation of beer.

Also, as discussed above, the flow rates that Ryu discloses are much lower than those used in the present invention; compare the retention time of about 50 hours (tubular reactor, volume 3 l, optimal flow rate 60 ml per hour) and about 50 to 5 hours (multistage reactor, volume 1 l, flow rate 20 to 200 ml per hour) of Ryu and about two hours in the method according to the present invention (description, page 2, line 15); see also Example 1, pages 8-13).

Based upon the disclosure of Ryu, a person skilled in the art is unable to know whether the yeast will adhere to the carrier material when using the higher flow rates of the present invention. It is because of this adherence problem of the yeast to the carrier material when using higher flow rates that modified carrier materials such as DEAE-cellulose (for example, in Pajunen) had earlier been used. The present inventors have surprisingly found that the claimed wood and other similar, natural materials may be used at such high flow rates.

When an invention is a new combination or arrangement of components, to conclude that the invention is obvious requires that there be some suggestion, motivation or teaching in the prior art whereby a person of ordinary skill would have selected the components that the inventor selected and then used them in the manner the inventor did, Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc., 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed. Cir. 1993) ["When the patented invention is made by combining known components to achieve a new system, the prior art must provide a suggestion or motivation to make such a combination."]; Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934, 15

USPQ2d 1321, 1323 (Fed. Cir. 1990) ["It is insufficient that the prior art show similar components, unless it also contains some teaching, suggestion or incentive for arriving at the claimed structure."].

If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue, In re Rouffet, 47 USPQ2d at 1457-58. Furthermore, rejecting patents solely by finding prior art correlaries for the claimed elements would permit the Examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such approach would be "an illogical and inappropriate process by which to determine patentability." Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

Accordingly: "To prevent the use of hindsight based on the invention to defeat patentability of the invention, [the Federal Circuit Court of Appeals] requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." In re Rouffet, 47 USPQ2d at 1457-58.

In the Office Action of July 21, 2003, the Examiner cited Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) for the assertion that selection of a known material based on the suitability for its intended use supports a prima facie obviousness determination. In the Sinclair & Carroll case, the patentee had developed a rapidly drying printing ink. All that was needed to produce such an ink was a solvent which evaporated quickly upon heating. Knowing that the boiling point of a solvent is an indication of its rate of evaporation, the patentee merely made selections from a list of solvents and their boiling points. The Court held that this was no more than "selecting the last piece to put in the last opening of a jigsaw puzzle." The solvent had no functional relation to the printing ink involved. It served as an inert carrier. The choice of solvent was dictated by known, required properties.

In the present matter, the invention involves more than a mere substitution of materials. As stated in the specification, the wooden particles used may be produced from various types of wood and are substantially different from DEAE-cellulose resin in nature and composition. Significantly, the claimed wooden particles differ substantially in cost over the more expensive DEAE-cellulose resin yet achieve the same kind of results. The wooden particles are not merely an inert carrier as in the Sinclair case since the wood species to be used can be chosen so that the aromatic substances contained in it will have a desired effect on the taste and flavor of the beer to be produced.

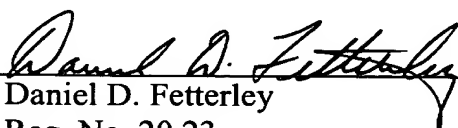
Therefore, the present invention is not a mere substitution of one material for another in an old method, it is a new combination of steps/materials that achieve a novel maturation method of unexpected quality and a relatively inexpensive price.

In light of the above, applicant respectfully traverses the Examiner's rejection under 35 U.S.C. § 103(a) particularly, the Examiner does not set forth a prima facie case of obviousness for combining Ryu and Pajunen such that the references would have rendered the present invention obvious to one of ordinary skill in the art. Therefore, withdrawal of the § 103(a) rejection is respectfully requested.

For all the reasons advanced above, applicant respectfully submits that the application is in proper condition for allowance, and that action is earnestly solicited.

Respectfully submitted,

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